Improving the Effectiveness of Stormwater Management in Maine

A Report to the 121st Maine Legislature

Submitted by

The Maine Department of Environmental Protection

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Executive Summary

The Maine Department of Environmental Protection (Department) has administered the Maine Stormwater Management Law (Stormwater Law) since 1996. The Stormwater Law includes requirements that the Department develop a list of watersheds of bodies of water most at risk from new development, as well as sensitive or threatened regions or watersheds. The Department is required to adopt rules specifying quantity and quality standards for stormwater to apply in those watersheds. In 1997, the Department established lists of lakes and coastal waters, and rivers and streams with public water supplies, along with the quantity and quality standards, but did not develop lists for other rivers and streams due to a lack of data. By 2002, the Department had sufficient data to begin rulemaking, but in the meantime, had identified a number of issues with respect to the stormwater program.

In 2003, the Maine Department of Environmental Protection (Department) introduced a bill to the Maine Legislature, which led to a mandate that the Department report back to the Legislature by February 1, 2004 with recommendations for improving stormwater management in Maine. The mandate required the Department to consult with state and federal agencies and representatives of interested stakeholder groups. The Joint Standing Committee on Natural Resources is authorized to report out legislation based on the recommendations related to storm water management to the Second Regular Session of the 121st Legislature.

A stakeholder group was convened in May 2003, and met monthly thereafter through January 2004. A number of issues were discussed at the meetings. To help guide the development of recommendations, the following guiding principles were agreed to:

1. Stormwater standards should result in meaningful protection. They should accomplish protection without unnecessary requirements; they should be achievable, cost-effective and based on good science.
2. Stormwater standards should not foster an unintended consequence of sprawl, as defined by state policy.
3. Stormwater standards should be understandable. They should be comprehensible and written in plain English. They should not be unnecessarily complex.
4. Stormwater standards should not conflict with other major environmental initiatives.

Department Recommendations

- The Department has developed recommendations forEnact statutory changes to:

  - Require that all projects subject to the Maine Stormwater Law meet basic water quality protection standards be met by all projects;
  - Set the permit threshold at one acre of disturbance;
  - Allow "license by rule" for infiltration of stormwater; and
  - Regulate existing sources in the watersheds of impaired waters where they are identified as significant contributors;contributors to the cause of impairment.

- The Department is also recommending that it proceed withEnact rule changes to:

  - Define and designate "most at risk" watersheds and "sensitive or threatened" regions or watersheds as directed in the Maine Stormwater Law;
  - Revise the Quantity and Qualityquantity and quality standards in the Stormwater Rulesstormwater rules (Chapter 500) to provide more meaningful protection, and to provide applicants with options where on-site treatment of stormwater is not feasible, such as compensation fees or off-site mitigation;
  - Allow for reducedflexible standards for development proposed in an impaired watershed that is also in a municipally designated growth zone if a Local Watershed Management Plan has been developed to address the causes of impairment;
  - Develop improved maintenance requirements that will improve the level of maintenance on thefor stormwater treatment practiceslocated on their property by requiring periodic inspection and certificationinspections of those practices by an engineer or other qualified person and certification by the owner or owner's agents;
  - Resolve problems that have come to light through administering the program since 1997; and
  - Allow for the use of innovative approaches to meeting stormwater standards, provided contingency plans are developed for use in the event the innovative approach does not work.

- The Department recommends that if, through the TMDL process, itThrough the establishment of Total Maximum Daily Loads (TMDLs) , if the Department should identify impaired urban streams where the Department determinesthat it would be infeasible to restore water quality to meet designated uses, then the Department should conduct a Use Attainability Analysis (UAA) for the water resource.

- The Department also recommends that it take the following non-regulatory actions:

Provide municipalities with tools for developing local stormwater management programs (the Maine Stormwater Law already provides for delegation of the program to a municipality if an approved local program exists).

Develop a list of financial assistance options for municipalities or watershed districts seeking to develop and/or implement local management programs. The Department should include consideration of these needs in developing priorities for environmental bonds.

Develop information for the regulated community to improve their understanding of what they need to do to comply with state and federal program requirements. This information should also describe ways to minimize stormwater impacts through the use of Low Impact Development measures.

- Continue the its education campaign to build the public's knowledge base on stormwater issues.
- Continue to offer training to a variety of audiences (developers, contractors, consultants, and municipal officials) on proper erosion and sedimentation controls.
- Provide municipalities with tools for developing local stormwater management programs.
- Develop a list of financial assistance options, including bonds, for municipalities or watershed districts seeking to develop and/or implement local management programs.
- Develop information for the regulated community to improve their understanding of what they need to do to comply with state and federal program requirements. This information should also describe ways to minimize stormwater impacts through the use of Low Impact Development measures.

The Department is recommending four statutory changes. These are the only changes the Legislature is being asked to act on at this time. However, to understand the context of those revisions, it is important to become familiar with the nature of the changes the Department is contemplating in rule, particularly with respect to the establishment of a list of streams most at risk from new development. The statute and rule changes are to a large degree inter-dependent. For instance, what the Department will propose for new development standards in the watersheds of impaired streams will depend on whether or not a mechanism is put into place to eventually bring significant existing sources of stormwater into regulation. A less stringent standard for new development could be allowed in rule if existing sources will be included. This is why the Department is not recommending that statutory changes be delayed until after the rules are revised.

A. Introduction

Stormwater management has become a topic of increasing concern in Maine, both environmentally and politically. As progress has been made in cleaning up our State's waters from end-of-pipe wastewater discharges, we'rethe Department is now finding that some of ourthe most significant water quality problems are not from these discharges, but from the cumulative effect of a number of activities ranging from agriculture to development to household management. Pollutants from these activities include toxins, bacteria, sediment and nutrients, and they are often conveyed to our water resources via stormwaterlakes, rivers, streams runoff.
-and coastal waters via stormwater runoff.

The **Maine Department of Environmental Protection (Department)**Department has been working on stormwater management issues for many years. Much has been learned about the effectiveness of different stormwater treatment practices, known as Best Management Practices (BMPs), through both in-state and national studies. This field of study continues to expand and the Department continues to support research through its Nonpoint Source (NPS) Program, funded through Section 319 of the Federal Clean Water Act. The NPS Program has also allowed the Department to invest in the identification and elimination of pollution sources, as well as conduct education and outreach activity.

_ years through several programs. The Department's Nonpoint Source Program has invested significant resources in identifying and eliminating sources. The Department has also been managing stormwater through regulatory programs. Controlling erosion and sedimentation from land use activities **has been a focus**as well as the control of stormwater, have been provisions of the Site Location Law since the early 1970's. However, standards to treat the quality of **the focus on stormwater developed more recently. In 1996, the Maine**stormwater, not just the quantity, did not exist until the passage of the Stormwater Management Law in 1996, and the subsequent rules adopted in 1997. In addition, an Erosion and Sedimentation Control Law (ESC Law) applicable to all organized area of the State was passed in 1996. In **was passed, and,**recognition of the importance of riparian buffers along our water resources in protecting water quality, the Natural Resources Protection Act (NRPA) was amended in 2001 to regulate removal of vegetation adjacent to those resources. And, in 2003, new federal requirements went into effect under the National Pollutant Discharge Elimination System (NPDES) stormwater program.

The Department's experience administering the Stormwater Law, coupled with the added responsibility of administering the federal program requirements, led

Department staff to conclude that we need to re-think how stormwater management should be conducted. The Department introduced a bill to the Legislature in 2003, which led to the following mandate:

> **Sec. 5. Report.** By February 1, 2004, the Department of Environmental Protection shall report to the Joint Standing Committee on Natural Resources with recommendations for improving the effectiveness of storm water management in this State. These recommendations may include draft rules pursuant to the Maine Revised Statutes, Title 38, sections 413 and 420-D to regulate storm water discharges to impaired waters from existing development where necessary to allow restoration of water quality and from new development both during and after construction. The department may also make recommendations concerning other issues such as encouraging the creation of local or regional storm water utility districts and funding storm water management programs at the state and local level, including long-term efforts to inspect, maintain and upgrade or retrofit storm water management systems in impaired or at-risk watersheds or sensitive or threatened regions or watersheds.
>
> The department shall consult with state and federal agencies as well as representatives of interested stakeholder groups, including business and environmental groups and the Maine Municipal Association, when developing these recommendations. The Joint Standing Committee on Natural Resources may report out legislation based on the recommendations related to storm water management to the Second Regular Session of the 121st Legislature.

~~As part of the Stormwater Rules adopted by the Board of Environmental Protection and approved by the Maine Legislature in 1997, the Department has been tasked with developing a list of "most at risk" rivers and streams. This task remained uncompleted up until 2002 because of a lack of~~ The Stormwater Management Law requires the Department to "establish by rule a list of watersheds of bodies of water most at risk from new development," as well as a list of sensitive or threatened regions or watersheds that include "the watersheds of surface waters that are susceptible to degradation of water quality or fisheries because of the cumulative effect of reasonably foreseeable levels of development activity within the watershed of the affected surface waters." The Department is required to adopt rules specifying quantity and quality standards for stormwater to apply in those watersheds. In 1997, the Department did develop lists of most at risk lakes, coastal waters and streams with public water supplies, and sensitive or threatened watersheds for lakes, and rivers with public water supplies. Quantity and quality standards were also established. However complete lists of most at risk and sensitive rivers and streams were not established due to lack of needed data to support what should be included on the lists. While data became available in 2002, the Department held off on rulemaking ~~sufficient data, and since 2002,~~ because of the desire of many interested parties to have the Department's proposal reviewed through a stakeholder process.

The stakeholder process began in the summer of 2002 to help the Department develop language for a general permit for discharges from construction activities, in accordance with Federal stormwater requirements from the National Pollutant Discharge Elimination System (NPDES) Program. The stakeholder group completed that work in December 2002, and then was reconvened in May 2003 to provide input to the Department for this report.

In addition to this report, the Department has developed draft revisions to Chapter 500 of the Stormwater. These revisions address some of the issues and recommendations that appear below, including a proposed list of most at risk streams. A technical sub-group of the current stakeholder group provided extensive input into the development of the draft revisions, and the draft revisions built upon work done by a previous stakeholder group. A draft is available on the Department's website. However, members of the current stakeholder group have not, as a group, had the opportunity to fully discuss the proposed revisions. The Department intends to continue work on the both Chapters 500 and 502 and to continue to seek input from stakeholders, before initiating rulemaking later in 2004.

B. Stakeholder Process

In 2002, the Department convened two separate stakeholder groups on stormwater management. The groups were convened to provide guidance on how we should implement new federal stormwater requirements from the National Pollutant Discharge Elimination System (NPDES) Program. The NPDES Program includes requirements that 28 municipalities, located in four urban areas of the state (southern border, greaterborder and Portland, Lewiston and Bangor and vicinities) develop and implement stormwater management programs. One stakeholder group provided input on how the state should administer this program with the affected municipalities.

The NPDES Program also requires that the Department regulate all construction activities that create at least one acre of disturbed land and result in a point source stormwater discharge from the site.

A second stakeholder group was convened to provide input on how this requirement should be administered, including input on the feasibility of integrating this part of the NPDES Program with the Maine Stormwater Law requirements. Because of a March 2003 deadline for implementing the federal NPDES requirements and the number of issues that the Department raised concerning the state program, the group and the Department concurred that developing an integrated program was not feasible within that timeframe. However, the stakeholders and Department also agreed that discussions should continue on how to address stormwater issues.

The second stakeholder group was reconvened in May 2003 and has met monthly since that time to assist in developing this report. Participantshave included representatives from the groups identified in the Legislative mandate above. A professional facilitator was hired to run the meetings. A list of participants appears in Appendix 1. A significant amount of time in meetings was spent providing information on how water quality is managed in Maine. Presentations were given on how water quality in streams is assessed, how waters are classified, and the relationship between stream water quality and the amount of development in a watershed.

C. Stormwater Management Issues

Through discussions between Department staff and stakeholders, the following issues have been were identified that need to be addressed:

1. In recent years, the Department has been monitoring small urban streams and has found many with water quality impacts that are attributed to pollutants in runoff. However, Streams have not yet been added to the "most at risk" or "sensitive or threatened" lists under the Stormwater Law. Department staff has proposed that 64 streams be listed as most at risk based on the percentage of impervious area in a watershed of a stream provide the basis for listing a stream as "most at risk" (see Appendix 2) In(7%) in their watersheds. Eighteen of those streams have been monitored and found to be impaired (not meeting their water quality classification; see Appendices 2 and 3). More than 40 of the proposed "most at risk" streams have not yet been monitored, so the list of impaired streams is expected to grow as new bio-monitoring data becomes available. Another 8 streams are also proposed for listing not because of the amount of imperviousness in their watersheds, but addition, those streamsbecause they have also been determined to be impaired due to urban runoff would also be included on the list (in most cases, impaired waters will also exceed the impervious threshold for "most at risk" designation; see Appendix 3). Standards.The Department has only proposed to list a stream as impaired if monitoring data exists that documents the impairment. Stormwater quantity and quality standards have been proposed (to be included in draft rule) that rule).development proposals in these watersheds would have to meet. There is disagreement amongsome stakeholders as to whether it is appropriate to use a single threshold of imperviousness for designating "most at risk" streams, and as to what that level should be.

2. The Classification of Maine Waters law, Title 38 MRSA Section 464 (4)(F)(3) provides that "[t]he department may issue a discharge license … for a project affecting a water body in which the standards of classification are not met if the project does not cause or contribute to the failure of the water body to meet the standards of classification." To meet this requirement, applicants under the NPDES Program proposing to discharge stormwater to waters impaired due to urban development will need to take measures to show that there is no net contribution to the impairment. The CostDepartment has proposed that applicants for permits issued pursuant to the Stormwater Law also be required to meet this standard. Stakeholders have raised concerns about the cost and technical feasibilityhavebeen raised as concerns for meeting this requirement.

3. Imposing stricter standards on "most at risk" or "sensitive or threatened" watersheds, which in most cases will be located in urban areas, will increase development costs in these areas. This has led to a concern that the rules

would create an incentive for a developer to relocate toan outlying or area,undeveloped areas, thereby contributing to more sprawl.

Even if strict standards are imposed on new development in watersheds of impaired waters, water quality will not meet standards, unless discharges from existing development are reduced. Under the authority of the federal Clean Water Act, DEP is assessing causes of impairment through development of Total Maximum Daily Loads (TMDL) for impaired waters, including those impaired due to nonpoint sources typically entering the resource through stormwater runoff. The process for identifying these sources is a time-consuming one that will take department staff many years to complete (Appendix 3), making it difficult to know, in the short term, who should be included as an existing source for the purposes of regulation. See Appendix 6 for a discussion of the TMDL program.

4. A. Current quantity and quality standards in DEP'sDepartment rules have not been viewed as effective by DEPDepartment staff, nor by consulting engineers. The engineering community is still learning about the efficiencies and effectiveness of Best Management Practices. The existing "peak flow" standard for controlling the quantity of runoff leaving a development is seen as insufficient in that it does not protect a water resource from damage due to an increase in the total volume of runoff leaving a site. In addition, the heavy reliance on percentage removal of total suspended solids (TSS) for protecting water quality is seen as insufficient in that the resulting discharge of sediment will be highly variable depending on the grain size distribution of the sediment load being treated. While it is easier to treat a sediment load that has a high percentage of coarse sand, it is the fine particles, silts and claysthat will not be removed, butthat are the greatest concern for impacting water quality.

   B. The use of infiltration practices to treat stormwater has also raised concerns about potential ground water impacts. Infiltration of stormwater from some sources may need pre-treatment prior to infiltration, or may not be appropriate for infiltration. Other sources that are relatively clean, such as rooftop runoff, are more appropriate for infiltration. However, in many locations in Maine, soils are not suitable to allow a significant level of infiltration to occur. In these locations, certain Best Management Practices may allow for some incidental infiltration to occur, while the remaining stormwater will be discharged to surface water. There is need for clarification in the standards for what is considered infiltration, and for the conditions under which infiltration may be appropriate.

   C. The requirements for projects in most at risk watersheds, and in particular, impaired watersheds can be expensive and technically difficult to meet. Options are needed for projects in these watersheds, such as paying a compensation fee or providing for mitigation work off the project site.

5. Maintenance of stormwater Best Management Practices has been poor to date, according to Department staff, municipal officials and members of the engineering consultant community. The Department and municipalities lack sufficient resources to conduct compliance inspections and follow-up with permittees to ensure that maintenance is carried out. Without the needed maintenance, BMPs often become ineffective and in some instances, may do more harm than good.

6. Currently, stormwater is largely managed on a site by site basis, through the permit review process. This approach does not, in most cases, allow for a holistic, watershed perspective for water resource protection. For example, the detention of runoff from a development may be appropriate when looked at individually, but when combined with many other developments in the watershed, may result in a greater impact on a stream by lengthening the period of erosive high flows in the stream. In addition, many small developments are below the regulatory threshold and are therefore unregulated. The cumulative impact of these developments is often significant.

7. The existing Stormwater Law and Rules is seen by many, including DEP Licensing staff, as very complicated and difficult to understand.

8. The overlap with the Maine Construction General Permit (MCGP), adopted pursuant to the federal NPDES Stormwater regulations has added to the complexity of stormwater regulation in Maine. The two programs have different thresholds and standards. It would be much easier for applicants and administrators alike, if these programs could operate with similar thresholds and standards, such that a single application form could be used to meet the requirements of both programs.

8. programs. The Department proposed an integrated program to stakeholders in 2002, whereby the State's stormwater program, through amendments to the Stormwater Law and rules, would also satisfy the Federal program requirements. Stakeholders at that time felt that the integrated approach was too complicated given the short time available to meet the Federal program requirements (March 2003). However, interest remains strong for finding ways to simplify the permit process.

9. The department has had several years of experience implementing the Stormwater Management Law and Rules (Chapter 500), as well as some experience implementing the MCGP program. As a result, staff has identified areas of the rules that need amendment or clarification. This is an ongoing process. Many of these changes are minor clarifications, but some will result in substantive change. Needed changes that have been identified include, but are not limited to, the following:

- The permit by rule section needs to be re-focused on projects that do not need engineering review;
- Basic requirements in certain areas need to specified (ex. erosion control, buffers, and ponds);
- On-site stormwater standards need to be met before a project puts stormwater into a municipality's stormwater system that serves as a conduit into a resource;
- The level-lip spreader standard needs updating and increased flexibility; and
- The rule needs to be better integrated with requirements for subsurface discharges of stormwater.

10. The Department can administer the proposed stormwater program revisions if all of its currently authorized positions are filled. The Department has also concluded that revisions to the stormwater rules regarding quality and quantity standards can result in a simpler review process, allowing the engineering staff to keep up with the workload.

D. Guiding Principles for Management Strategy

The stakeholder group discussed what the underlying principles should be that guide decisions on stormwater management in Maine. Broad agreement was reached that the following four principles should provide guidance, recognizing that there will be tension between these principles and that trade-offs will be inevitable:

1. Stormwater standards should result in meaningful protection. They should accomplish protection without unnecessary requirements; they should be achievable, cost-effective and based on good science.

2. Stormwater standards should not foster an unintended consequence of sprawl, as defined by state policy.

3. Stormwater standards should be understandable. They should be comprehensible and written in plain English. They should not be unnecessarily complex.

4. Stormwater standards should not conflict with other major environmental initiatives.

E. ~~E.~~ Department Recommendations

Regulatory

1. The Maine Stormwater Law should be amended so that a basic level of water quality protection standards applies to all regulated area of the state, focusing on erosion and sedimentation control, housekeeping and maintenance of "best management practices" (see Appendix 5). The Maine4, Section 3, for Erosion and Sedimentation Control Law (ESC Law) alone is not providing sufficient protection.proposed statutory revision).

   Rationale: Under the Maine Stormwater Management Law, quality standards only apply if a project is located in a "most at risk" or "sensitive or threatened" watershed. This means that we don't the Department does not have the ability to require basic measures to protect water quality. Since we want to keep our waters clean, all projects should be meeting basic standards for erosion and sedimentation control and housekeeping, and should be required to maintain any BMPs used. These are low cost measures that if taken, will help avoid the need for much higher cost remedial measures at some point in the future.
   future.
   It should be noted that other Maine laws, either by design or indirect effect, may have an impact on stormwater quality. For example, the Maine Erosion and Sedimentation Control Law, when properly implemented, can help reduce sediment loads from very small projects not addressed under other state programs. The Maine Solid Waste Rules help address stormwater issues associated with landfills. The Maine Gravel Pit laws encourage internally drained pits. The Natural Resources Protect Act provides for a 75-foot setback along streams that may be reduced under permit by rule if there is no practicable alternative for an activity location on the parcel. The department supports these laws and the contribution they make, but does not believe they negate or lessen the need to support the proposals presented in this report.

2. The Maine Stormwater Law should be amended so that a one-acre disturbance is subject to regulation rather than using the multi-tiered approach in current law (20,000 sq. ft. impervious, 1 acre impervious or 5 acres disturbed depending on designation of watershed). (See Appendix 5.)
2. 4, Section 2.)

   Rationale: A single threshold is easier to administer, is more readily understandable by the public, and is more consistent with the one-acre disturbance threshold in the Federal NPDES Program than the current multiple thresholds. It would simplify the question of when a permit is needed and would allow for integration of the state and federal programs. The proposed 1-acre disturbed threshold for the Stormwater Law differs from the federal threshold in that:

- It applies would apply regardless of location (there is no "discharge" limitation).whether a discharge is a "point source" or "nonpoint source" (under the NPDES Program, only point sources are subject to regulation). The approach proposed is consistent with Maine's approach to area thresholds in Maine's ESC Law, Stormwater Law and Site Law, and reflects the State's watershed approach to protection of water quality. Basic standards need to be met everywhere in the watershed, and temporary measures need to be in place before the beginning of construction.
- The proposed one-acre threshold doeswould not allow the Department to, at its discretion, review projects below one acre in size. This case-by-case smaller threshold is part of federal law and the Maine Construction General Permit (MCGP), but the Department does not propose to add it into the Maine Stormwater Management Law.

The Department is proposing that projects between 1 and 5 acres disturbed,of developed area, but less than 20,000 square feet of impervious area in "most at risk" watersheds, or less than 1 acre impervious area in other watersheds be eligible for a "permit by rule." Permit by rule standards would be basic standards similar to those now in the MCGP, and the MCGP notification would be combined with the permit by rule in those cases where both applied. Other changes in procedures and fees intended to consolidate and simplify these programs are also being considered.

3. The Protection and Improvement of Waters Law should be amended to allow "license by rule" standards for infiltration of stormwater (this proposed amendment is in the Department's omnibus proposal for this session).part of proposed legislation in LD 1655).

   Rationale: This change will eliminate the need for a person who proposes to use infiltration of stormwater, and who is following standards, from having to get a separate wastewater discharge license. Such a requirement would be an unnecessary burden for both applicants and for Department staff administering the program.

4. The Department should use the existing Total Maximum Daily Load (TMDL) assessment process, or an equivalent assessment process to identify significant existing sources of pollutants in impaired watersheds. The Department should seek authority under the Stormwater Law to regulate those sources (See Appendix 5).4, Section 4).

   Rationale: The Department is required by Federal law to conduct water quality assessments of its surface waters and to develop TMDLs for waters that do not attain their water quality classification. These TMDLs should provide information on the pollutant sources that are causing non-attainment.

If water quality is to be restored, those sources need to be reduced or eliminated. See Appendix 6 for discussion of the TMDL program.

Before a water is designated as impaired under the Stormwater Law (impaired due to urban runoff) or designated as "most at risk," it must go through rule making for adoption in Chapter 502. The public will have an opportunity for comment on that proposed list. An additional rule making would subsequently take place before the Department designates significant existing sources in an impaired watershed.

The Department expects that rule making for identification of significant existing sources will take place on a watershed basis, or even for multiple watersheds, as opposed to rule making on each source identified. Where significant existing sources are identified, the Department expects to require some remedial work to lessen the impact of stormwater runoff from the site.

5. The Department, through rule, should continue the process of defining and designating "most at risk" watersheds and "sensitive or threatened" regions or watersheds as directed in the Maine Stormwater Law. Streams that are impaired due to urban runoff should be included in the category of "most at risk" as well as streams that have at least 7% of their watershed in impervious area (see ~~Appendix~~Appendices 2 and 3). Areas that are expected to receive sufficient economic or population growth over the next 25 years to have an impact on water quality should be included as "sensitive or threatened."

   Rationale: One of the guiding principles embraced by the stormwater stakeholder group is that the standards should provide "meaningful protection," i.e., they should accomplish protection without unnecessary requirements. The "most at risk" and "sensitive or threatened" categories provide a way to tailor the standards to the needs of a particular watershed or region.

   Discharges from development in impaired watersheds ~~may~~should only be allowed where they will not cause or contribute to a violation of water quality standards. To meet this ~~requirement~~standard where urban runoff is a significant contributor to the impairment means that rigorous standards will need to be met. Thus, it is appropriate that impaired streams be included as "most at risk" which allows the Department to require a higher standard. ~~Watersheds that are at least 7% impervious are appropriate for "most at risk" designation given data showing that streams begin to show measurable degradation when approximately 10% of the watershed is impervious.~~ Data exists which shows that streams show signs of degradation when 10% or less of the watershed is developed to impervious area. While in the future, with implementation of appropriate BMPs it may be possible to exceed 10% imperviousness before seeing impacts to water quality, development that has

occurred to date for the most part has not included such BMPs. Even if regulated development does incorporate those BMPs, much of the overall development in the watershed is not regulated under the stormwater law (e.g., single family homes are exempt). The Department is therefore proposing to use 7% impervious area as the level of development in a watershed that would make it "most at risk" from new development. See Appendix 2 for further discussion on the Department's proposal concerning impervious area.

In addition to watersheds where development activity is already putting water quality at risk, there will be other areas where foreseeable future development will also threaten water quality. The Department expects these to be places where a significant amount of commercial development will likely occur. No widely accepted models have been identified for projecting the amount or type of development activity. The Department is still working on how to best identify these areas.

6. The Department should revise the quantity and quality standards in order to provide better protection than the current peak flow and Total Suspended Solids (TSS) standards provide and more flexibility for applicants. The standards should include options such as compensation fees in most at risk watersheds, where a locally or state approved Compensation Fee Utilization Plan exists, and off-site mitigation credits for applicants with projects proposed to be located in impaired watersheds.

   Rationale: This recommendation is based on the guiding principle that the standards should provide meaningful protection. Currently, projects meeting the peak flow and TSS standards may not be providing sufficient quantity and quality protection. The Department has been working with engineering consultants to develop standards that should result in a higher level of protection while also providing flexibility to applicants.

7. The Department, through rule, should allow for reduced standards for new development in impaired watersheds where a Local Watershed Management Plan (LWMP) has been developed to address the causes of impairment, provided the plan is approved by the Department, and is being implemented. The amount of reduction in standards for new development would be case specific and would need to ensure that the goals of water quality restoration would be achieved through treatment of existing sources of pollution. The Department should allow implementation to be deferred in municipal designated growth zones until financial assistance is available, or up to five years, whichever comes first.

   Rationale: Local management plans This recommendation, along with recommendation #4, addresses the concern that new development should not be required to pay for all the development that occurred before standards were put in place. LWMPs can be better tailored to address issues in a watershed than the state-state-run stormwater program. In the long run, and with State oversight, they will probably result in more successful protection or restoration work. While a LWMP could be developed prior to a TMDL being completed in an impaired watershed, it would more likely be a tool for implementing the needed pollutant discharge reductions from existing sources identified in a TMDL where one has been completed. For this reason, the Department should encourage the coordination of work on TMDLs and LWMPs.

   8.The Department wants to provide incentive forshould create incentives municipalities to develop local management plans,LWMPs, including where appropriate, stormwater utility districts. Stormwater utility districts can provide a municipality with the means to finance its stormwater management program. Linking implementation of plans to the availability of financial assistance in designated growth zones would provide a way of encouraging growth in these areas without sacrificing progress over the long term in meeting water quality goals.

8.

8. The Department, through rule, should developmaintenance requirements that will improve the level of maintenance onthe stormwater treatment practices located on their propertyapproved under the Stormwater Law or Site Location of Development Law. This should be accomplished by requiring periodic inspectionand certification of those practices by an engineer or other qualified person, and certification by the property owner, or owner's agent, that the treatment practices are operating properly. The Department should commit to conducting spot inspections to ensure compliance with maintenance requirements.

   Rationale: According to Department field services staff, municipal officials and consulting engineers, maintenance of stormwater BMPsto date has been very poor in general. These groups also agree that the effectiveness of BMPs is

greatly diminished without maintenance, in some cases to the point that they do more harm than good. For permitted sites, periodic inspection and certification requirements would increase the likelihood that the needed maintenance will occur, and help the Department to make more effective use of its limited resources for targeted inspections.

9. The Department should make additional amendments to the stormwater rules to resolve problems that have come to light through administering the program since 1997. Examples of such needed changes include standards for stormwater basins, standards for buffers, and revised permit by rule include, but are not limited to the following:

   - standards to focusThe permit by rule section needs to be re-focused on projects that do not requireneed engineering review.review;
   - Basic requirements in certain areas need to specified (ex. erosion control, buffers, and ponds);
   - On-site stormwater standards need to be met before a project puts stormwater into a municipality's stormwater system that serves as a conduit into a resource;
   - The level-lip spreader standard needs updating and increased flexibility; and
   - The rule needs to be better integrated with requirements for subsurface discharges of stormwater.

   Rationale: The Department has been collecting a list of issues since it began administering the program in 1997. The Department will include amendments to address these issues at the same time as it proposes other rule changes proposed above.

10. The Department, through rule, should allow for the use of innovative approaches to meeting stormwater standards, provided contingency plans are developed for use in the event the innovative approach does not work.

    Rationale: New products and techniques for stormwater management are still emerging. The Department should encourage innovation in the interest of gaining more information on what works in Maine. Where outcomes are uncertain, there should be back-up plans in place, however, to ensure that there will not be long-term water quality impacts in the event an innovative approach does not work.

11. If the Department should, through the TMDL process, identify impaired urban streams where the Department determines that it would be infeasible to restore water quality to meet designated uses, then the Department should conduct a Use Attainability Analysis (UAA) for the water resource.

Rationale: The Department's long-term goal for all waters is to have them meet their water quality classification. Over time, opportunities may develop to improvethe Department seeks to improve the quality of even severely impaired waters. The Use Attainability Analysis is a tool of "last resort" where all efforts to restore water quality that are practicable have been taken and the water still will not meet its classification. If there are urban streams that fit this description, then a UAA is an appropriate action.

Non-Regulatory

12. The Department, with assistance from the Maine State Planning Office, should provide municipalities with tools for developing local stormwater management programs (the Maine Stormwater Law already provides for delegation of the program to a municipality if an approved local program exists).

    Rationale: Municipal officials are only just becoming aware of stormwater as an issue that needs to be dealt with at the local level. They need guidance and tools for managing this issue. The State needs to provide this information in order to promote local solutions.

13. The Department, with input from municipalities, should develop a list of financial assistance options for municipalities or watershed districts seeking to develop and/or implement local management programs. The Department should include consideration of these needs in developing priorities for environmental bonds.

    Rationale: If municipalities are to play a larger role in managing stormwater, they will need financial assistance.

14. The Department should develop information for the regulated community to improve their understanding of what they need to do to comply with state and federal program requirements. This information should also describe ways to minimize stormwater impacts through the use of Low Impact Development measures.

15. The Department should continue its campaign to build the public's knowledge base on stormwater issues.

16. Continue to offerThe Department should increase training to a variety of audiences (developers, contractors, consultants, municipal officials) on proper erosion and sedimentation controls.

    Rationale (14 – 16): Awareness surveys have shown that stormwater is not well understood by the public, including the regulated community. In order to

improve the quality of stormwater management designs associated with new development, or with retrofitting existing development, information on how to reduce development impacts needs to be developed and actively promoted.

Appendix 1. Stakeholder Participants

Facilitator: Ann Gosline

Name	Stakeholder/organization

Name	Stakeholder Organization
Archino Howe, Ann	STT Design Consultants
Archino Howe, Ann	SYT Design Consultants
Austin, Jeff	Maine Municipal Association
Barden, Michael	MPPA
Barden, Michael	Maine Pulp & Paper Association
Beal, Carl	ACEC
Beal, Carl	Assoc. of Civil Engineering Consultants
Bennett, Nick	NRCM
Bennett, Nick	Natural Resources Council of Maine
Bobinsky, Mike	City of Portland
Bradstreet, Steve	Env. Eng. & Remediation
Bradstreet, Steve	Env. Eng. & Remediation Consultants
Bragg, Dave	Milone & Macbroom
Bragg, Dave	Milone & Macbroom Consultants
Braley, David	DHS-DWP
Braley, David	Dept. of Human Services, Drinking Water Program
Brancsom, John	Maine Turnpike Authority
Bridge, Jennie	EPA
Bridge, Jennie	Environmental Protection Agency
Brogunier, Hope	BACORD
Brogunier, Hope	Bangor Area Citizens Organized for Responsible Development
Burns, Jenn	Maine Audubon
Butts, John	Assoc.Const of ME
Butts, John	Associated Constructors of Maine
Castallo, Jodi	Maine NEMO
Castallo, Jodi	Nonpoint Education for Municipal Officials (NEMO) Program
Davis, Ginger	MEREDA
Davis, Ginger	Maine Real Estate Development Association
DellaValle, Beth	SPO
DellaValle, Beth	Maine State Planning Office
Dube, Norm	Atlantic Salmon Comm.
Dube, Norm	Atlantic Salmon Commission
Earley, Kathi	City of Portland
Edelstein, Jeff	Interlocal SW Working
Edelstein, Jeff	Cumberland Co. Interlocal Stormwater Working Group
Edmonds, Helen	Maine Forest Products Council (Pierce Atwood)
Geoffroy, Kate	Pierce Atwood
Geoffroy, Kate	Maine Forest Products Council (Pierce Atwood)
Glidden, Dale	Augusta Sanitary Dist.

Glidden, Dale	Augusta Sanitary District
Hall, Chris	Maine Chamber
Hall, Chris	Maine State Chamber of Commerce
Henderson, Zach	Maine Rivers
Janeski, Todd	SPO coastal program
Janeski, Todd	Maine State Planning Office Coastal Program
Johannesman, Susan	OPLA
Johannesman, Susan	Legislative Office of Policy & Legal Analysis
Joyce, Kat	Verrill & Dana
Kamila, Dave	ASCE
Kamila, Dave	American Society of Civil Engineers
McKee, Kevin	Vortechnics
Newkirk, Peter	MDOT
Newkirk, Peter	Maine Dept. of Transportation
Newman, Sharon	MTA (Preti Flaherty)
Newman, Sharon	Maine Turnpike Authority (Preti Flaherty)
Olson, Chris	MDOT
Olson, Chris	Maine Dept. of Transportation
Payne, Elizabeth	Bacord
Payne, Elizabeth	Bangor Area Citizens Organized for Responsible Development
Rabasca, Kristie	Env. Eng. & Remediation
Rabasca, Kristie	Env. Eng. & Remediation Consultants
Rettenmaier, Liz	SPO
Rettenmaier, Liz	Maine State Planning Office
Ring, Jim	City of Bangor
Rioux, Mike	ST. Germain
Rioux, Mike	St. Germain Consultants
Schalit, Naomi	Maine Rivers
Shelley, Peter	CLF
Shelley, Peter	Conservation Law Foundation

Appendix 1. Stakeholder Participants (continued)

Stakeholder Name	**Organization**
Simon, John	Balanced Eng.
Simon, John	Balanced Engineering Consultants
Stevens, Jay	ACEC
Stevens, Jay	Assoc. of Civil Engineering Consultants
Timpano, Steve	IFW
Stakeholder Name	**Organization**
Timpano, Steve	Maine Dept of Inland Fisheries & Wildlife
Tolman, Andy	DHS, Drinking Water Program
VanBourg, Jon	Maine Water Utilities Association

DEP Staff

Breton, Mary
Breton, Mary*
Dennis, Jeff
Gates, Judy
Hopeck, John
Hubert, Marianne
Kokemuller, Linda
Ladd, David
Ladd, David*
McGlauflin, Art
Richardson, Hetty
Richardson, Hetty*
Waddell, Dave
Witherill, Don
Witherill, Don*

* Staff who attended all stakeholder meetings

Appendix 2 Identifying Streams Most at Risk from Development Rationale for Using

Urban land uses such as roads, buildings, parking, and associated lawns place a number of stresses on the aquatic communities living in the streams draining through these areas. The inability of impervious land cover to infiltrate precipitation causes elevated frequency and duration of erosive flows, resulting in channel widening and down cutting in some places and deposition of eroded sediments in others. These habitat-disturbing events occur so frequently that a stable community of aquatic insects often cannot be maintained. Lack of infiltration can also cause extreme reductions in base flow, and the resultant loss of velocity and elevation of temperature can stress both insect and trout populations. Loss of riparian cover and the shade it provides can stress the aquatic community by elevating temperature; eliminating leaf fall, a healthy stream's primary food and energy source; and eliminating large, woody debris, a major component of stream habitat. Stormwater runoff from urban land uses carries a variety of pollutants that can result in the loss of sensitive species. These include nutrients, which result in excessive growth of attached algae and loss of dissolved oxygen, as well as heavy metals and hydrocarbons, which can be toxic to aquatic life.

As a result of these urban stresses, the aquatic life in streams draining urban and urbanizing areas is often impaired. Sensitive fish and insect species may be absent, and there may be heavy accumulations of organic material because the stream community is not functioning properly. The degree to which these effects are seen tends to correlate strongly with the density of urban uses in the watershed, which is often quantified by estimating the percentage of the watershed that is covered by impervious land uses.

Imperviousness for Most at Risk Designationas an indicator

To be added

"Imperviousness" refers to the area of roads, parking lots, sidewalks, rooftops, and other impermeable areas in the watershed. The percentage of the watershed that is impervious can be used as an indicator to estimate the impact of land development on aquatic systems. For a good summary on this topic, see *The Practice of Watershed Protection*, Article 1, "The Importance of Imperviousness", (off-site), which discusses research relating relative stream stability and health to the percent imperviousness of a watershed (off-site, takes awhile to load). Staff at DEP has also studied many streams in Maine to determine whether the indicator works in Maine, and it does. No streams with watersheds of over 10% imperviousness, which have been examined in Maine, have been found to meet Class B standards. In other words, all have shown detrimental impact to the aquatic community of the stream. Growth in watersheds below 10% can be expected to result in detrimental impacts on streams as imperviousness approaches 10%, unless steps are taken to control the quantity (frequent high flows) and quality (pollutant load) impacts from stormwater runoff.

Most at Risk Streams

The department is proposing that “streams most at risk from development” be identified either by their current, impaired quality or by the percent imperviousness of their watersheds. Streams that currently do not meet aquatic life standards or the dissolved oxygen standards as a result of urban effects, called impaired streams, would automatically be considered “most at risk”. In addition, streams that either currently meet standards or have not been monitored to determine if they meet standards would be considered “most at risk” if the percent imperviousness of their watersheds is 7% or greater. The 7% threshold was chosen for several reasons. First, we can be quite certain, based on a large amount of data both in Maine and throughout the country, that once stream watersheds exceed 10% imperviousness their aquatic life will start to show significant signs of degradation. In some streams this shows up at even lower percent imperviousness, as indicated in a recent study in Maine (Morse and Kahl, 2003). If substantial stormwater quality and quantity controls can be placed on new development in stream watersheds before they reach the threshold of impairment, perhaps impairment can be avoided. Requiring these controls in watersheds that are currently at or above 7%, but are not yet above 10%, will give these streams a chance to avoid impairment, or at least to postpone it. Second, the data currently used to estimate watershed imperviousness is from a 1992 LandSat satellite image, and therefore represents a historic level of watershed development, and hence a very conservative estimate of current imperviousness. In many of our small stream watersheds in growth areas a lot of commercial development has occurred in the last decade, and many of these watersheds that were 7% or 8% in 1992 may now be approaching, or even exceeding, 10%.

Most of the streams that have watersheds with 7% or more imperviousness are small (first or second order) streams. The majority of them have at least some commercial development in them, and often most of the imperviousness is associated with commercial development. As would be expected they tend to be concentrated around and within high population service centers.

References

Morse, Chandler and Kahl, Steve, 2003. *Measuring the Impact of Development on Maine Surface Waters.* Senator George J. Mitchell Center for Envrionmental and Watershed Research at the University of Maine (8 p.)

Schueler, Tom, 1994. *The Importance of Imperviousness;* article from Wate*rshed Protection Techniques.* The Center for Watershed Protection, Ellicott City, MD (12 p.)

Appendix 3 List of Proposed "Most at Risk" Streams (Including Impaired Streams) Note: List will be updated prior to rule-making if warranted by new data

~~Proposed "Most at Risk" Streams~~

Municipality	Stream Name	Wtrshed % Imp	Land Area (sq mi)	Biomon-tored?	Class	Impaired	AqL Class	DO Viol?	Bact Viol?	Urban Effect	TMDL Schedule
Auburn	Bobbin Mill Brook	7.9	1.54	1998	B	x	C	?	?	y	2008
Auburn	Logan Brook	11.4	0.28	pre 1998	B	x	?	y	y	?	2008
Augusta	Kennedy Brook	19.4	1.21	pre 1998	B	x	?	?	y	y	2012
Augusta	Stone Brook	7.0	3.53	n	B		?	?	?	?	
Augusta	Trib to Bond Brook	16.4	1.74	2001	B		?ip	?	?	?	
~~Augusta~~	~~Whitney Brook~~	~~12.2~~	~~1.63~~	~~n~~	~~B~~	~~x~~	~~?~~	~~?~~	~~y~~	~~?~~	
Augusta	Whitney Brook	12.2	1.63	n	B		?	?	y	?	
Bangor	Arctic Brook (Valley Ave)	21.7	0.97	1997	B	x	NA	?	?	y	2004
~~Bangor~~	~~Penjajawoc Str (incl. Meadow Bk)~~	~~5.8~~	~~8.57~~	~~2001~~	~~B~~	~~x~~	~~NA~~	~~?~~	~~?~~	~~y~~	~~2004~~
Bangor	Birch Stream	31.2	1.49	2001	B	x	NA	y	?	y	2005
Bangor	Penjajawoc Str (incl. Meadow Bk)	5.8	8.57	2001	B	x	NA	y	?	y	2004
Bangor	Shaw Brook	9.0	5.48	2001	B	x	?ip	?	?	y	2008
~~Bangor~~	~~Unnamed Str (Ohio St)~~	~~31.2~~	~~1.49~~	~~2001~~	~~B~~	~~x~~	~~NA~~	~~?~~	~~?~~	~~y~~	~~2004~~
~~Bangor~~	~~Unnamed Str (Pushaw)~~	~~11.7~~	~~0.71~~	~~1997~~	~~B~~	~~x~~	~~NA~~	~~?~~	~~?~~	~~y~~	~~2004~~
Bangor	Unnamed Str (Pushaw)	11.7	0.71	1997	B	x	NA	?	?	y	2004
Bangor	Unnamed Str Bangor 1	20.2	0.53	n	B		?	?	?	?	
Bangor	Unnamed Str Bangor 2	22.8	4.57	n	B		?	?	?	?	
Brewer	Unnamed Str Brewer 1	24.7	0.96	n	B		?	?	?	?	
~~Brunswick~~	~~Mare Brook~~	~~9.2~~	~~5.38~~	~~2000~~	~~B~~	~~x~~	~~NA~~	~~?~~	~~?~~	~~y~~	
Brunswick	Mare Brook	9.2	5.38	2000	B	x	NA	?	?	y	2008
Brunswick	Unnamed Str Brunswick 2	13.1	1.07	n	B		?	?	?	?	
Brunswick	Unnamed Str Brunswick 3	28.0	0.45	n	B		?	?	?	?	
Brunswick	Unnamed Str Brunswick 4	19.6	1.20	n	B		?	?	?	?	
Brunswick	Unnamed Str Brunswick 5	16.7	0.28	n	B		?	?	?	?	
Brunswick	Unnamed Str Brunswick 6	22.0	0.27	n	B		?	?	?	?	
Brunswick	Unnamed Str Brunswick 7	12.8	0.60	n	B		?	?	?	?	
Bucksport	Silver Lake Outlet	12.8	0.39	1996	B	x	C	?	?	?	
Calais	Unnamed Str Calais	21.8	0.18	n	B		?	?	?	?	
~~Camden~~	~~Megunticook River~~	~~15.3~~	~~1.22~~	~~n~~	~~B~~	~~x~~	~~?~~	~~?~~	~~y~~	~~?~~	
Camden	Megunticook River	15.3	1.22	n	B		?	?	y	?	
Caribou	Caribou Stream (in Caribou only)			1999	B	x	NA	?	?	y	2012
Ellsworth	Unnamed Str Ellsworth Falls	7.9	0.11	n	B		?	?	?	?	
Falmouth	Norton Brook	8.8	0.78	n	B		?	?	?	?	
Falmouth	Scitterygussett Creek	8.4	0.86	n	B		?	?	?	?	
~~Freeport~~	~~Concord Gully Brook~~	~~10.4~~	~~1.03~~	~~2001~~	~~B~~		~~?ip~~	~~?~~	~~?~~	~~?~~	

Freeport	Concord Gully Brook	10.4	1.03	2001	B		?ip	n	y	?	2004
~~Freeport~~	~~Frost Gully Brook~~	~~5.5~~	~~2.63~~	~~2000~~	~~A~~	~~x~~	~~A~~	~~y~~	~~y~~	~~y~~	
Freeport	Frost Gully Brook	5.5	2.63	2000	A	X	A	n	y	y	2004
Gardiner	Unnamed Str Gardiner	7.1	1.55	n	B		?	?	?	?	
~~Gray~~	~~Libby Brook~~	~~8.8~~	~~1.72~~	~~1999~~	~~B~~	~~x~~	~~C~~	~~?~~	~~?~~	~~?~~	
Gray	Libby Brook	8.8	1.72	1999	B		C	?	?	?	
~~Lewiston~~	~~Dill Brook~~	~~15.4~~	~~3.45~~	~~1998~~	~~B~~	~~x~~	~~C~~	~~?~~	~~?~~	~~y~~	~~2008~~
Lewiston	Dill Brook	15.4	3.45	1998	B	X	C	?	?	y	2008
~~Lewiston~~	~~Goff Bk~~			~~pre 1998~~	~~B~~	~~x~~	~~?~~	~~?~~	~~y~~	~~y~~	~~2008~~
~~Lewiston~~	~~Gully Brook~~			~~pre 1998~~	~~B~~	~~x~~	~~?~~	~~?~~	~~y~~	~~y~~	~~2008~~
~~Lewiston~~	~~Jepson Brook~~	~~18.3~~	~~2.52~~	~~pre 1998~~	~~B~~	~~x~~	~~?~~	~~y~~	~~y~~	~~y~~	~~2008~~
Lewiston	Jepson Brook	18.3	2.52	pre 1998	B	X	?	y	y	y	2008
~~Limerick~~	~~Brown Brook~~			~~2000~~	~~B~~	~~x~~	~~NA?~~	~~?~~	~~?~~	~~y~~	~~2008~~
Limerick	Brown Brook			2000	B	X	NA?	?	?	y	2008
Lincoln	Mattanawcook Stream	20.6	0.23	2000	C		C	?	?	?	
~~Lisbon~~	~~Unnamed Str Lisbon 1~~	~~14.6~~	~~0.93~~	~~1998~~	~~B~~	~~x~~	~~C~~	~~?~~	~~?~~	~~y~~	

~~Municipality~~	~~Stream Name~~	~~Wtrshed % Imp~~	~~Land Area (sq mi)~~	~~Biomon-tored?~~	~~Class~~	~~Impaired~~	~~AqL Class~~	~~DO Viol?~~	~~Bact Viol ?~~	~~Urban Effect~~	~~TMDL Schedule~~
Municipality	**Stream Name**	**Wtrshed % Imp**	**Land Area (sq mi)**	**Biomon-tored?**	**Class**	**Impaired**	**AqL Class**	**DO Viol?**	**Bact Viol?**	**Urban Effect**	**TMDL Schedule**
~~Norway~~	~~Pennesseewassee L Outlet~~	~~6.2~~	~~0.84~~	~~n~~	~~B~~	~~x~~	~~?~~	~~y~~	~~y~~	~~?~~	
Lisbon	Unnamed Str Lisbon 1	14.6	0.93	1998	B	X	C	?	?	y	
~~Ogunquit~~	~~Stevens Brook~~			~~2000~~	~~B~~	~~x~~	~~NA~~	~~?~~	~~?~~	~~y~~	~~2008~~
Norway	Pennessee-wassee L Outlet	6.2	0.84	n	B	X	?	y	y	?	
~~Portland~~	~~Capisic Brook~~	~~24.8~~	~~2.76~~	~~1999~~	~~C~~	~~x~~	~~NA~~	~~y~~	~~y~~	~~y~~	~~2008~~
Portland	Capisic Brook	24.8	2.76	1999	C	X	NA	y	y	y	2005
~~Portland~~	~~Fall Brook~~	~~22.0~~	~~1.56~~	~~n~~	~~C~~	~~x~~	~~NA?~~	~~?~~	~~?~~	~~y~~	~~2012~~
Portland	Fall Brook	22.0	1.56	n	C	X	NA?	?	?	y	2012
Portland	Unnamed Str Portland 1	10.2	0.37	n	C		?	?	?	?	
Portland	Unnamed Str Portland 2	23.2	1.44	n	C		?	?	?	?	
Portland	Unnamed Str Portland 3	24.6	1.29	n	B		?	?	?	?	
Portland	Unnamed Str Portland 4	24.8	0.45	n	B		?	?	?	?	
Portland	Unnamed Str Portland 5	27.6	0.23	n	C		?	?	?	?	
Portland	Unnamed Str Portland 6	16.8	1.20	n	C/B		?	?	?	?	
Presque Isle	Kennedy Brook	7.4	2.80	n	B		?	?	?	?	
Presque Isle	Unnamed Str	17.2	2.01	n	B		?	?	?	?	
Rockland	Lindsay Brook	18.7	1.17	n	B		?	?	?	?	
Rockland	Weskeag River Trib	13.1	0.53	n	B		?	?	?	?	
~~Saco~~	~~Goosefare Brook~~	~~7.1~~	~~9.42~~	~~2000~~	~~B~~	~~x~~	~~C~~	~~?~~	~~?~~	~~y~~	~~drafted~~
Saco	Goosefare Brook	7.1	9.42	2000	B	X	C	?	?	y	accepted
~~Scarborough~~	~~Phillips Brook~~			~~pre 1998~~	~~C~~	~~x~~		~~y~~	~~?~~	~~y~~	~~2008~~
Scarborough	Phillips Brook			pre 1998	C	X		y	?	y	2008
Skowhegan	Water Supply Br	20.6	0.55	n	B		?	?	?	?	

Skowhegan	Whitten Brook	14.8	0.48	n	B	x	?	?	y	y	
Skowhegan	Whitten Brook	14.8	0.48	n	B		?	?	y	y	
So. Portland	Barberry Creek	23.9	1.39	1999	C	x	NA	y	y	y	2012
So. Portland	Barberry Creek	23.9	1.39	1999	C	X	NA	y	y	y	2004
So. Portland	Long Creek	16.3	3.45	1999	C	x	CorNA	y	y	y	2004
So. Portland	Long Creek	16.3	3.45	1999	C	X	C or NA	y	y	y	2004
So. Portland	Red Brook			1999	C	x	NA	?	?	?	2012
So. Portland	Red Brook			1999	C	X	NA	?	?	?	2012
So. Portland	Spurwink River	14.8	1.66	n	C		?	?	?	?	
So. Portland	Trout Brook (incl. Kimball Bk)	15.4	2.66	2000	C	x	NA	?	?	y	2012
So. Portland	Trout Brook (incl. Kimball Bk)	15.4	2.66	2000	C	X	NA	?	?	y	2005
So. Portland	Unnamed Str S Portland 1	28.3	0.51	n	C		?	?	?	?	
Topsham	Unnamed Str Topsham 1	10.7	0.93	n	B		?	?	?	?	
Topsham	Unnamed Str Topsham 2	15.8	0.30	n	B		?	?	?	?	
Topsham	Unnamed Str Topsham 4	11.0	0.61	n	B		?	?	?	?	
Waterville	Unnamed Str Waterville 1	13.2	0.81	n	B		?	?	?	?	
Westbrook	Beaver Pond Brook	11.1	0.54	n	B		?	?	?	?	
Westbrook	Unnamed Str Westbrook 1	10.3	0.58	n	B		?	?	?	?	
Westbrook	Unnamed Str Westbrook 2	13.7	0.17	n	B		?	?	?	?	
Westbrook	Unnamed Str Westbrook 3	14.1	0.35	n	B		?	?	?	?	
Westbrook	Unnamed Str Westbrook 4	9.4	0.22	n	B		?	?	?	?	
Winslow	Unnamed Str Winslow 1	12.0	0.27	n	B		?	?	?	?	
Winterport	Unnamed Str Winterport 1	7.3	0.61	n	B		?	?	?	?	
Winthrop	Mill Stream			pre 1998	B	x	NA	?	?	?	2012
Winthrop	Mill Stream			pre 1998	B	X	NA	?	?	?	2012

Key to Headings	
Land Area	The area in square miles of the stream's watershed

Key to Headings

Watershed % Imp	The estimated % imperviousness of the stream's watershed
Watershed % Imp	The est
Biomonitored ?	If the stream has been evaluated for compliance with Aq L standards, the year in which the biomonitoring took place. An "n" indicates the

imated % imperviousness of the stream's watershed based on DEP modeling.

Land Area The area in square miles of the stream's watershed.

Biomonitor

stream has not yet

~~been evaluated.~~

ed? The year in which the biomonitoring took place. An "n" indicates the

~~Class~~ ~~The stream's water quality classification~~

stream has not yet been evaluated.

Clas

~~AqL Class~~ ~~For evaluated stream's, the highest class aquatic life standard that the~~

s The stream's water quality classification.

Impaired Whether the stream is impaired due to urban runoff.

A

~~the macroinvertebrate community meets. NA indicates failure to meet~~

qL Class For evaluated stream's, the highest class aquatic life standard that t

~~even Class C standards. A "?" Indicates stream is not yet evaluated.~~

he the macroinvertebrate community meets. NA indicates failure to meet even Class C standards. A "?" Indicates stream is not yet evaluated.

~~DO Viol?/Bact Viol?~~ ~~Yes or no on whether there has been a documented violation of dissolved oxygen or bacteria standards. A "?" Indicates stream is not yet evaluated.~~

DO Viol?/Bact Viol? Yes or no on whether there has been a documented violation of dissolved

~~Urban Effect~~ ~~Yes or no on whether it is likely that impairment is due to urban stormwater and associated effects. A "?" Indicates stream is not yet evaluated.~~

oxygen or bacteria standards. A "?" Indicates stream is not yet eval

uated.

Urban Effect Yes or no on whether it is likely that impairment is due to urban stormwater and associated effects. A "?" Indicates stream is not yet evaluated.

TMDL Schedule Year when DEP expects to complete a TMDL on the stream

Appendix 4. Candidate "Sensitive or Threatened" Locations

This list was compiled based on both projected population and population density using a linear projection of population change from the period 1990 to 2000. Municipalities included on the list have a projected population of at least 5,000 people, or a projected population density of at least 150 people per square mile.

TOWN	COUNTY	LA_SQ_MI	POP2000	POPDENS2000	POP2030	POPDENS2030
Arundel	York	23.9210	3585	150	6308	263.70
Auburn	Androscog.	59.6193	23270	390	19853	333.00
Augusta	Kennebec	55.3150	18607	336	10222	184.80
Bangor	Penobscot	34.3928	31560	918	26321	765.31
Bar Harbor	Hancock	42.3440	4827	114	5945	140.40
Bath	Sagadahoc	9.0864	9292	1023	7643	841.15
Belfast	Waldo	34.0202	6401	188	6467	190.09
Berwick	York	37.4255	6373	170	7418	198.21
Biddeford	York	29.9836	21005	701	21666	722.60
Boothbay	Lincoln	5.7507	2338	407	2289	398.04
Boothbay Harbor	Lincoln	22.1822	2965	134	3891	175.41
Brewer	Penobscot	15.3027	9013	589	8899	581.53
Bridgton	Cumberland	56.5061	4897	87	6645	117.60
Brunswick	Cumberland	46.7402	21234	454	21963	469.90
Bucksport	Hancock	51.4852	4922	96	5174	100.49
Buxton	York	40.5293	7476	184	10339	255.10
Camden	Knox	17.7508	5261	296	5829	328.38
Cape Elizabeth	Cumberland	14.5606	9082	624	9689	665.43
Casco	Cumberland	31.2877	3478	111	4825	154.21
Castine	Hancock	7.8348	1345	172	1898	242.25
China	Kennebec	49.7123	4116	83	5289	106.39
Cumberlandd	Cumberland	26.1432	7179	275	11150	426.50
Damariscotta	Lincoln	12.4217	2044	165	2735	220.18
Dayton	York	17.9408	1813	101	3647	203.28
Durham	Androscogn	38.2230	3390	89	5007	130.99
Eastport	Washington	3.5178	1646	468	674	191.60
Eliot	York	19.7731	5969	302	7846	396.80
Ellsworth	Hancock	79.2494	6472	82	7925	100.00
Fairfield	Somerset	53.6851	6590	123	6136	114.30
Falmouth	Cumberland	29.4306	10344	351	18462	627.31
Farmingdale	Kennebec	11.2798	2813	249	2470	218.98
Farmington	Franklin	55.7141	7424	133	7326	131.49
Freeport	Cumberland	34.7810	7823	225	10486	301.49
Gardiner	Kennebec	15.5686	6215	399	4535	291.29
Glenburn	Penobscot	27.1481	3976	146	6268	230.88
Gorham	Cumberland	50.8313	14176	279	21029	413.70
Gray	Cumberland	43.1673	6839	158	9566	221.60
Greene	Androscog	32.3403	4087	126	5317	164.41
Hallowell	Kennebec	5.8727	2473	421	2266	385.85
Hampden	Penobscot	37.9414	6340	167	7383	194.59
Harpswell	Cumberland	23.9185	5251	220	5937	248.22
Hermon	Penobscot	35.8165	4449	124	6494	181.31
Hollis	York	32.0830	4125	129	5736	178.79

TOWN	COUNTY	LA_SQ_MI	POP2000	POPDENS2000	POP2030	POPDENS2030
Houlton	Aroostook	36.6021	6494	177	6061	165.59
Kennebunk	York	35.5418	10495	295	17895	503.49
Kennebunkport	York	20.5131	3724	182	4810	234.48
Kittery	York	17.5563	9575	545	10047	572.27
Lebanon	York	54.9657	5096	93	7569	137.70
Lewiston	Androscog	34.3676	35792	1041	23446	682.21
Limington	York	42.0453	3411	81	5209	123.89
Lisbon	Androscog	23.2764	9109	391	7921	340.30
Lyman	York	38.8589	3808	98	5021	129.21
Manchester	Kennebec	21.1451	2470	117	3565	168.60
Mechanic Falls	Androscog	11.1670	3147	282	3799	340.20
Monmouth	Kennebec	34.1844	3799	111	5097	149.10
New Gloucester	Cumberland	47.2086	4819	102	7478	158.40
North Berwick	York	37.9781	4303	113	5773	152.01
North Yarmouth	Cumberland	21.4585	3222	150	5562	259.20
Oakland	Kennebec	25.6998	5974	232	7034	273.70
Ogunquit	York	4.0898	1228	300	1983	484.86
Old Orchard Beach	York	7.5335	8877	1178	12048	1599.26
Old Town	Penobscot	39.2313	8147	208	7560	192.70
Orono	Penobscot	18.1197	9126	504	4751	262.20
Orrington	Penobscot	24.7018	3537	143	4192	169.70
Owls Head	Knox	8.4423	1603	190	1675	198.41
Paris	Oxford	40.7979	4805	118	5695	139.59
Poland	Androscog	42.5348	4879	115	6461	151.90
Portland	Cumberland	21.3397	64418	3019	63906	2994.70
Presque Isle	Aroostook	76.5458	9537	125	6399	83.60
Randolph	Kennebec	2.0428	1916	938	1802	882.12
Raymond	Cumberland	33.1357	4311	130	7270	219.40
Rockland	Knox	12.9142	7628	591	6520	504.87
Rockport	Knox	22.1932	3216	145	4283	192.99
Sabattus	Androscog	25.7766	4496	174	6836	265.20
Saco	York	38.4706	16871	439	21782	566.20
Sanford	York	47.5811	20866	439	21816	458.50
Scarborough	Cumberland	47.5006	17020	358	30372	639.40
Sidney	Kennebec	42.1994	3521	83	6262	148.39
Skowhegan	Somerset	58.8613	8846	150	9094	154.50
South Berwick	York	32.1326	6690	208	9036	281.21
South Portland	Cumberland	12.0143	23390	1947	23864	1986.30
South Thomaston	Knox	11.3200	1420	125	1986	175.44
Standish	Cumberland	60.4543	9313	154	14134	233.80
Thomaston	Knox	10.5930	3760	355	5098	481.26
Topsham	Sagadahoc	32.1939	9126	283	10115	314.19
Turner	Androscog	59.6739	4988	84	6982	117.00
Vassalboro	Kennebec	44.2571	4057	92	5160	116.59
Veazie	Penobscot	2.9935	1746	583	2069	691.16
Waldoboro	Lincoln	71.1655	4931	69	5850	82.20
Warren	Knox	46.7335	3804	81	5580	119.40
Waterboro	York	55.5451	6238	112	11353	204.39
Waterville	Kennebec	13.5910	15643	1151	10893	801.49
Wells	York	57.2604	9420	165	14292	249.60
West Bath	Sagadahoc	11.8593	1804	152	2048	172.69

TOWN	COUNTY	LA_SQ_MI	POP2000	POPDENS2000	POP2030	POPDENS2030
West Gardiner	Kennebec	24.6318	2909	118	4015	163.00
Westbrook	Cumberland	17.1837	16188	942	16218	943.80
Windham	Cumberland	46.5190	14949	321	20585	442.51
Winslow	Kennebec	36.8950	7763	210	6984	189.29
Winthrop	Kennebec	31.0740	6249	201	7048	226.81
Wiscasset	Lincoln	24.6494	3610	146	4375	177.49
Yarmouth	Cumberland	13.3155	8375	629	9849	739.66
York	York	54.9671	12881	234	21965	399.60

~~Appendix 5.~~ Draft Statutory Changes

Sec. 1. 38 MRSA §420-C, second paragraph, is amended to read:

A person who owns property that is subject to erosion because of a human activity before July 1, 1997 involving filling, displacing or exposing soil or other earthen materials shall take measures in accordance with the dates established under this paragraph to prevent unreasonable erosion of soil or sediment into a protected natural resource as defined in section 480-B, subsection 8. Adequate and timely temporary and permanent stabilization measures must be taken and maintained on that site to prevent unreasonable erosion and sedimentation. This paragraph applies on and after July 1, 2005 to property that is located in the watershed of a body of water most at risk as identified in the department's storm water rules effective December 31, 1997 adopted pursuant to section 420-D and that is subject to erosion of soil or sediment into a protected natural resource as defined in section 480-B, subsection 8. This paragraph applies on and after July 1, 2010 to other property that is subject to erosion of soil or sediment into a protected natural resource as defined in section 480-B, subsection 8.

Sec. 2. 38 MRSA §420-D, first paragraph, is amended to read:

§420-D. Storm water management

A person may not construct, or cause to be constructed, a project that includes ~~20,000 square feet or more of impervious area or 5~~ one acre~~s~~ or more of disturbed area ~~in the direct watershed of a body of water most at risk from new development or one acre or more of impervious area or 5 acres or more of disturbed area in any other area~~ without prior approval from the department. A person proposing a project shall apply to the department for a permit using an application provided by the department and may not begin construction until approval is received. This section applies to a project or any portion of a project that is located within an organized area of this State

Sec. 3. 38 MRSA §420-D, section 1, is amended to read:

1. Standards. The department shall adopt rules specifying quantity and quality standards for storm water. Storm water quality standards for projects with 3 acres or less of impervious surface may address phosphorus, nitrates and suspended solids but may not directly address other dissolved or hazardous materials unless infiltration is proposed. ~~Storm water quality standards apply only in the direct watersheds of waterbodies most at risk from development and in sensitive or threatened geographic regions or watersheds defined by the department under subsection 4. Until such regions are defined, storm water quality standards are not required to be met by a permit applicant.~~

Sec. 4. 38 MRSA 420-D(12) is enacted to read:

~~12.~~**12. Significant existing sources.** ~~In addition to the approval required for construction pursuant to the first paragraph of this section, the~~The department may require a person owning or operating a significant ~~source to~~existing~~obtain approval from the department. A "significant source" is a~~ source of stormwater to implement a stormwater management system. The owner or operator shall obtain approval from the department pursuant to this subsection for the stormwater management system.

A "significant existing source" is a significant existing source of stormwater quantity or quality pollution from developed area that was in existence prior to July 1, 1997 and is located in the direct watershed of a waterbody that is impaired due to urban ~~runoff.~~ runoff. The department shall identify significant existing sources as provided in this subsection.

~~A.~~**A.** The department shall develop a total maximum daily load~~analysis or other appropriate study or plan~~ for the watershed of a waterbody impaired due to urban runoff prior to designating significant sources within the watershed.

~~B.~~**B.** The department shall promulgate rules prior to requiring that an owner or operator of a significant source within the direct watershed of a specific waterbody obtain approval of a stormwater management system. The rules must include provisions such as the following:

(1) The name or other means of identifying the waterbody that is impaired due to urban runoff;

(2) A list of significant sources or a description of the types or classes of significant sources ~~that require approval~~;

(3) A date or schedule indicating when approvals must be obtained; and

(4) Stormwater quantity and quality standards for stormwater management systems.

C. The owner or operator of a site designated as a significant source shall apply to the department for ~~approval.~~approval of a stormwater management system.

D. Significant existing sources do not include:

~~D.~~(1) ~~In addition to the exemptions~~Types of sources or activities described in subsection ~~7, this subsection does not apply to significant sources constructed prior to July 1, 1997 that would not have required approval from the department if constructed on or after July 1, 1997.~~7; or(2) The developed area of a facility required to meet ongoing stormwater management standards pursuant to a stormwater general or individual permit issued pursuant to Section 413.

Sec. 5. Transition. Prior approval is required pursuant to the Stormwater Management law if a person constructs, or causes to be constructed, one acre or more of disturbed area on or after the effective date of this Act.

A. If a person has a project that required approval prior to the effective date of this Act, the project continues to require approval on and after the effective date of this Act.

B. If a person has a project that did not require approval prior to the effective date of this Act, and the person proposes to construct or cause to be constructed one or more acre of disturbed area on or after the effective date of this Act, then approval is required. Only the construction on or after the effective date of this Act requires prior approval.

C. A disturbed area of less than one acre continues to be counted toward the one-acre permit threshold following permanent stabilization to the extent it is considered developed area as defined in rules adopted by the Department of Environmental Protection.

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Appendix ~~6.~~5. Options for Managing Stormwater (Not Included in Recommendations)

The stakeholder group spent time discussing a number of options for changing the way stormwater is managed in Maine. Most of these options appear in the list of Recommendations (Section E.), at least in part. ~~For those~~Those that have not been fully recommended by the ~~Department, a brief explanation~~ Department appear below.
~~follows the option as to why it was not included.~~

~~Regulatory~~

- Develop stormwater standards that apply equally in all parts of the state where the Stormwater Law applies. This would entail elimination of the "most at risk" and "sensitive or threatened" designations that are currently in the Stormwater Law.

  Not included: This approach would result in requirements the Department deems unnecessary in rural parts of the state. While this would help alleviate the concern for sprawl, it would not provide for "meaningful protection" in many instances.

~~- Apply a base level of standards for all regulated area of the state, but use the existing "most at risk" and "sensitive or threatened" categories to designate the areas where water quality and quantity impacts from new development are of concern, based on both past development and projected future growth. Develop criteria and a list of streams for these categories in keeping with current statutory and rule requirements.~~

~~- Develop a permitting threshold in the State's Stormwater Law that is more consistent with the one-acre disturbance threshold in the Federal NPDES Program. This would simplify the question of when I permit is needed and would allow for eventual integration of the state and federal programs.~~

~~- Develop quantity and quality standards in the rule that provide better protection than the current peak flow and TSS standards provide, but that also provide options for applicants, particularly for those located in impaired watersheds where they cannot cause or contribute to a water quality violation.~~

~~- Develop a provision for reducing standards in impaired watersheds where a local management plan has been approved by the Department, and is being implemented. Allow implementation to be deferred in municipal designated growth zones until financial assistance is available (for a limited time).~~

~~- Develop maintenance requirements that will improve the level of maintenance performed by permittees.~~

- Seek to regulate smaller developments, including single family homes; could include an exemption if path of stormwater run-off is disconnected; i.e., there is not a continuous channel for run-off to follow from the developed site to a receiving water.

  Not included: Single family homes, while high in number, do not tend to be major contributors of stormwater pollutants, other than for erosion and sedimentation during construction for which the Erosion & Sedimentation Control Law already applies (see separate DEP report to 121st Maine Legislature on the Erosion & Sedimentation Control Law, January 2004). The Department concludes that resources would be better spent focusing on stormwater from commercial and industrial development and roads.

~~- Use the existing Total Maximum Daily Load (TMDL) assessment process to identify significant existing sources of pollutants in impaired watersheds. Regulate those sources using authority of the wastewater discharge law, or seek additional authority under the Stormwater Law.~~

~~- Reduce or eliminate standards for certain degraded urban streams; use the Use Attainability Analysis (UAA) process to designate those streams.~~

~~Included in part: Clean Water Act does not allow for "writing off" of streams. Conducting a UAA on some impaired streams may be appropriate. However, even for those stream reaches, all practicable steps will be need to be taken first to restore water quality to the extent feasible.~~

~~- Include allowance for innovative approaches to meeting stormwater standards in the rule.~~

~~Non-Regulatory~~

~~- Develop outreach material for the regulated community to improve their understanding of what they need to do to comply with state and federal program requirements.~~

~~- Provide municipalities with tools for developing local stormwater management programs. The Maine Stormwater Law already provides for delegation of the program to a municipality if an approved local program exists.~~

~~- Seek financial assistance for municipalities or watershed districts seeking to develop and/or implement local management programs.~~

~~- Conduct a campaign to build the public's knowledge base on stormwater issues.~~

- Develop information for developers and the consulting community on ways to minimize stormwater impacts through the use of Low Impact Development measures.

- Continue to offer training to a variety of audiences (developers, contractors, consultants, municipal officials) on proper erosion and sedimentation controls.

Appendix 6: Overview of Current Total Maximum Daily Load - TMDL - Program and Regulations

An Introduction to TMDLs from the web site of the U.S. Environmental Protection Agency

Background

The Need - The Quality of Our Nation's Waters

Over 40% of our assessed waters still do not meet the water quality standards states, territories, and authorized tribes have set for them. This amounts to over 20,000 individual river segments, lakes, and estuaries. These impaired waters include approximately 300,000 miles of rivers and shorelines and approximately 5 million acres of lakes -- polluted mostly by sediments, excess nutrients, and harmful microorganisms. An overwhelming majority of the population - 218 million - live within 10 miles of the impaired waters.

Section 303(d) of the Clean Water Act

Under section 303(d) of the 1972 Clean Water Act, states, territories, and authorized tribes are required to develop lists of impaired waters. These impaired waters do not meet water quality standards that states, territories, and authorized tribes have set for them, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop TMDLs for these waters.

What is a TMDL?

A TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and allocates pollutant loadings among point and nonpoint pollutant sources. By law, EPA must approve or disapprove lists and TMDLs established by states, territories, and authorized tribes. If a state, territory, or authorized tribe submission is inadequate, EPA must establish the list or the TMDL. EPA issued regulations in 1985 and 1992 that implement section 303(d) of the Clean Water Act - the TMDL provisions.

Litigation

While TMDLs have been required by the Clean Water Act since 1972, until recently states, territories, authorized tribes, and EPA have not developed many. Several years ago citizen organizations began bringing legal actions against EPA seeking the listing of waters and development of TMDLs. To date, there have been about 40 legal actions in 38 states. EPA is under court order or consent decrees in many states to ensure that TMDLs are established, either by the state or by EPA.

EPA Actions to Implement the TMDL Program

Federal Advisory Committee

In an effort to speed the Nation's progress toward achieving water quality standards and improving the TMDL program, EPA began, in 1996, a comprehensive evaluation of EPA's and the states' implementation of their Clean Water Act section 303(d) responsibilities. EPA convened a committee under the Federal Advisory Committee Act, composed of 20 individuals with diverse backgrounds, including

agriculture, forestry, environmental advocacy, industry, and state, local, and tribal governments. The committee issued its recommendations in 1998.

The New TMDL Rule

These recommendations were used to guide the development of proposed changes to the TMDL regulations, which EPA issued in draft in August, 1999. After a long comment period, hundreds of meetings and conference calls, much debate, and the Agency's review and serious consideration of over 34,000 comments, the final rule was published on July 13, 2000. However, Congress added a "rider" to one of their appropriations bills that prohibits EPA from spending FY2000 and FY2001 money to implement this new rule.

Current TMDL Program

The current rule remains in effect until 30 days after Congress permits EPA to implement the new rule. TMDLs continue to be developed and completed under the current rule, as required by the 1972 law and many court orders. The regulations that currently apply are those that were issued in 1985 and amended in 1992 (40 CFR Part 130, section 130.7). These regulations mandate that states, territories, and authorized tribes list impaired and threatened waters and develop TMDLs.

Overview of the 1992 TMDL Regulations--Under Which the Current Program Operates

Scope of Lists of Impaired Waters

- States, territories, and authorized tribes must list waters that are both impaired and threatened by pollutants.
- The list is composed of waters that need a TMDL.
- At the state's, territory's, or authorized tribe's discretion, the waterbody may remain on the list after EPA approves the TMDL, or until water quality standards are attained.

2-Year Listing Cycle

- States, territories, and authorized tribes are to submit their list of waters on April 1 in every even-numbered year, except in 2000. In March 2000, EPA issued a rule removing the requirement for the 2000 list - though some states are choosing to submit such lists on their own initiative.

Methodology Used to Develop Lists

- States, territories, and authorized tribes must consider "all existing and readily available water quality-related information" when developing their lists.
- Monitored and evaluated data may be used.
- The methodology must be submitted to EPA at the same time as the list is submitted.
- At EPA's request, the states, territories, or authorized tribes must provide "good cause" for not including and removing a water from the list.

Components of a TMDL

- A TMDL is the sum of allocated loads of pollutants set at a level necessary to implement the applicable water quality standards, including -
  - ✓ Wasteload allocations from point sources, and
  - ✓ Load allocations from nonpoint sources and natural background conditions.

- A TMDL must contain a margin of safety and a consideration of seasonal variations.

Priorities/Schedules for TMDL Development

- States, territories, and authorized tribes must establish a priority ranking of the listed waterbodies taking into account the severity of pollution and uses to be made of the water, for example, fishing, swimming, and drinking water.
- The list must identify for each waterbody the pollutant that is causing the impairment.
- States, territories, and authorized tribes must identify waters targeted for TMDL development within the next 2 years.

Public Review/Participation

- Calculations to establish TMDLs are subject to public review as defined in the state's continuing planning process.

EPA Actions on Lists and TMDLs

- EPA has 30 days in which to approve or disapprove a state's, territory's, or authorized tribe's list and the TMDLs.
- If EPA disapproves either the state's, territory's, or authorized tribe's list or an individual TMDL, EPA has 30 days to establish the list or the TMDL. EPA must seek public comment on the list or TMDL it establishes.

1997 Interpretative Guidance for the TMDL Program

- EPA issued guidance in August, 1997, to respond to some of the issues raised as the program developed. The guidance includes a number of recommendations intended to achieve a more nationally consistent approach for developing and implementing TMDLs to attain water quality standards. These recommendations include:
  - ✓ States, territories, and authorized tribes should develop schedules for establishing TMDLs expeditiously, generally within 8-13 years of being

listed. EPA Regions should have a specific written agreement with each state, territory or authorized tribe in the Region about these schedules. Factors to be considered in developing the schedule could include:

- Number of impaired segments;
- Length of river miles, lakes, or other waterbodies for which TMDLs are needed;
- Proximity of listed waters to each other within a watershed;
- Number and relative complexity of the TMDLs;
- Number and similarities or differences among the source categories;
- Availability of monitoring data or models; and
- Relative significance of the environmental harm or threat.

✓ States, territories, and authorized tribes should describe a plan for implementing load allocations for waters impaired solely or primarily by nonpoint sources, including -

- Reasonable assurances that load allocations will be achieved, using incentive-based, non-regulatory or regulatory approaches. TMDL implementation may involve individual landowners and public or private enterprises engaged in agriculture, forestry, or urban development. The primary implementation mechanism may include the state, territory, or authorized tribe section 319 nonpoint source management program coupled with state, local, and federal land management programs and authorities,
- Public participation process, and
- Recognition of other watershed management processes and programs, such as local source water protection and urban storm water management programs, as well as the state's section 303(e) continuing planning process.
-

For more information, see EPA's TMDL web site at:
http://www.epa.gov/owow/tmdl/

- Status report on litigation
- TMDL Federal Advisory Committee Report
- Maps and information on impaired waters
- Links to other TMDL web sites, including states
- Regulations and guidance

Last updated on Wednesday, March 19th, 2003
URL: http://www.epa.gov/owow/tmdl/overviewfs.html